That some damage will result from such general rains this early in the year is certain. A considerable part of the prune crop is in process of drying, and the rain where it has been heavy will entail loss of some of the fruit and a good deal of expense in saving the rest that was exposed to the showers. Moreover, the grape crop may be more or less hurt, but reports are to the effect that the injury to that crop is not expected to be great in any part of the State.

It is worth noting that from nearly all the centers of the fruit and grape industry it is announced that the warnings of the Weather Bureau of the coming of the showers were given in time to enable the orchardists and vineyardists to prepare for them. Prunes that had been spread for drying were stacked before the rains came, and the loss, therefore, was much smaller than it would have been otherwise. The usefulness of the Bureau has thus been again demonstrated, and when all rural workers learn to pay attention to its reports the profit from its labors will be even greater than now.

In any case, however, the losses from the showers would have been slight in comparison with the gains that will result from the early coming of the beginning of the rainy season. The drought has been long and severe; it was beginning to tell upon the vitality of the orchards in many sections, and fears were expressed whether the trees would be able to form buds for the fruit of next year. The showers have come in time, it is to be hoped, to put an end to all anxieties on that score, and to give every rural industry reason for the hope of an abundant harvest in 1899.

W. H. Hammon, Forecast Official.

FORECASTS TO MILITARY CAMPS.

During September, 1898, provision was made, by direction of the Secretary of Agriculture, to telegraph from the Central Office of the Weather Bureau at Washington, forecasts to commanding officers of the several Army corps whenever weather conditions injurious to the health or comfort of troops under canvass were expected in the States where the Army corps were located. An appreciation of these forecasts is indicated by the following press notes:

New York Evening Telegram, September 16, 1898.

CAMP WIKOFF, MONTAUK POINT, L. I., *September* 16, 1898.

A severe storm set in here last night and continued this morning. The camp authorities had been warned of its approach by the Weather Bureau and were prepared for it. Every tent had been strengthened, and the storm did no damage in camp, except to make it cold and cheerless.

New York Times, September 24, 1898:

CAMP WIKOFF, MONTAUK POINT, L. I.

A storm, brief but violent, swept over the camp last night and this morning, but did no serious damage. The storm warning from the Weather Bureau saved a worse experience, for everything was made snug last night.

AREAS OF HIGH AND LOW PRESSURES.

During the month the paths of seven high areas and of nine low areas have been traced on Charts I and II. It should be noted that these conditions are often extremely indefinite, and it is an open question whether it is possible to trace them with anything like the accuracy assumed in these charts. Often a disturbed condition will cover many thousands of square miles, and the position of the lowest pressure in this region from day to day does not indicate a motion in a low center, but rather an effect of the disturbance. Whenever the path is on the edge of the region of observation it will be understood that the position of the center of high or low is somewhat indefinite, also the pressure recorded at such low center is only that at the nearest point of observation and may differ widely from the pressure at that exact point. The accompanying table gives the principal facts regarding the place of origin and disappearance, the duration and velocity of these highs and lows, and the following remarks are added.

Highs.—Four of the highs developed off the Pacific coast, two to the north of Montana, and one in the middle Missouri valley. No. III disappeared in Texas, but all the others could be traced to the Atlantic coast. The temperature changes accompanying the highs were very moderate, only three of them showing any marked fall. As No. I approached the middle Rocky Mountain region the afternoon of the 6th a fall in twenty-four hours of 32° occurred at Oklahoma, and the fall of 20° covered a region of 250,000 square miles. As high area No. II moved to south Dakota, afternoon of 9th, a fall of 30° occurred all over Kansas.

Lows.—There is a remarkable uniformity in the motion of the continental lows in that all but two started north of the fiftieth parallel and maintained their courses to the north of the region of observation till they reached the north Atlantic coast. No. I began in south Idaho and was last noted in the middle Mississippi valley. No. VII was first noted in the west Gulf, afternoon of 17th. This was of slight intensity, as it was held back by high pressures to the north and east; for this reason, also, its velocity, 15.2 miles an hour, was the slowest of the month. During the 9th, 10th, and 11th a storm center moved from the central part of the Gulf of Mexico northwestward to the Louisiana coast, attended by heavy rain and high northeast winds along the middle Gulf coast. During the 12th this storm passed rapidly northward and joined low area No. IV, over eastern Nebraska, by the morning of the 13th.

The highest winds of the month were as follows: 44 miles an hour at Milwaukee, a. m. of 6th, as No. III moved to the north of Lake Superior, and a wind of 40 miles at Pensacola, afternoon of 30th, caused by a disturbance in the Gulf. The heaviest rain of the month was 7.70 inches in twenty-four hours, at Pensacola, 29–30th of month; the heavy rains of the middle Gulf coast on those dates were caused by a storm which apparently remained nearly stationary over the west Gulf from the 27th to the close of the month.—*H. A. Hazen, Professor.*

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	1, p. m.	37	124	8, p. m.	40	72	4,080	7.0	583	24.3
II	7, p. m.	55	109	15, a. m.	46	59	3,390	7.5	452	18.8
III	14, a. m.	47	127	18, p. m.	34	101	1,770	4.5	393	16.4
IV	15, a. m.	45	100	17, p. m.	36	78	1,320	2.5	528	22.0
V	17, p. m.	49	125	21, p. m.	41	72	2,820	4.0	705	29.4
VI	21, a. m.	54	117	25, a. m.	47	60	3,320	4.0	830	34.6
VII	21, p. m.	36	123	29, a. m.	38	74	4,080	7.5	583	24.3
Total							20,780	37.0	4,074	169.8
Mean of 6 paths							2,969		582	24.3
Mean of 31.5 days									562	23.4
Low areas.										
I	31, p. m.*	42	114	3, p. m.	40	94	1,230	3.0	410	17.1
II	3, a. m.	51	101	5, p. m.	49	61	1,800	2.5	720	30.0
III	5, a. m.	51	98	8, a. m.	48	61	1,650	3.0	550	22.9
IV	11, p. m.	53	116	14, p. m.	48	87	1,920	3.0	640	26.7
V	13, p. m.	51	117	17, p. m.	48	52	2,880	4.0	720	30.0
VI	16, a. m.	54	107	19, p. m.	49	57	2,160	3.5	617	25.7
VII	17, p. m.	26	98	24, a. m.	41	69	2,370	6.5	365	15.2
VIII	25, p. m.	50	84	28, p. m.	47	59	1,440	3.0	480	20.0
IX	26, a. m.	54	111	28, p. m.	53	96	960	2.5	384	16.0
Total							16,410	31.0	4,886	203.6
Mean of 8 paths							1,823		543	22.6
Mean of 40 days									529	22.0

* August.

RIVERS AND FLOODS.

The light precipitation incidental to the season in the Missouri and middle and upper Mississippi valleys caused the